SUMMARY

The Nuclear Material Stabilization mission consists of the Plutonium Finishing Plant (PFP), WBS 1.4.5, PBS TP05.

NOTE: Unless otherwise noted, the Safety, Conduct of Operations, and Cost/Schedule data contained herein is as of February 29, 2000. All other information is as of March 21, 2000.

As of March 17, 2000 a total of 201 cans of Plutonium oxides and sludges have been stabilized through thermal stabilization (28 items since last report). A total of 13 liters of Plutonium nitrate solution have been stabilized in the prototype vertical denitration calciner (i.e., no change since December 1999 due to focus on $Mg(OH)_2$ Precipitation Process installation activities).

Progress is nearly complete on the installation of three additional muffle furnaces for thermal stabilization of oxides and on installation of one (1) of three (3) $Mg(OH)_2$ process system glove boxes for stabilization of solutions.

Fiscal-year-to-date milestone performance (EA, DOE-HQ, and RL) shows that one of two milestones (50 percent) was completed on or ahead of schedule, no milestones were completed late, and one (50 percent) is overdue. Milestone (TRP-00-500) is late due to a proposed change in process implementation. A letter was sent to RL indicating the milestone would not be met. Further details can be found in the milestone exception report following the cost and schedule variance analysis.

ACCOMPLISHMENTS

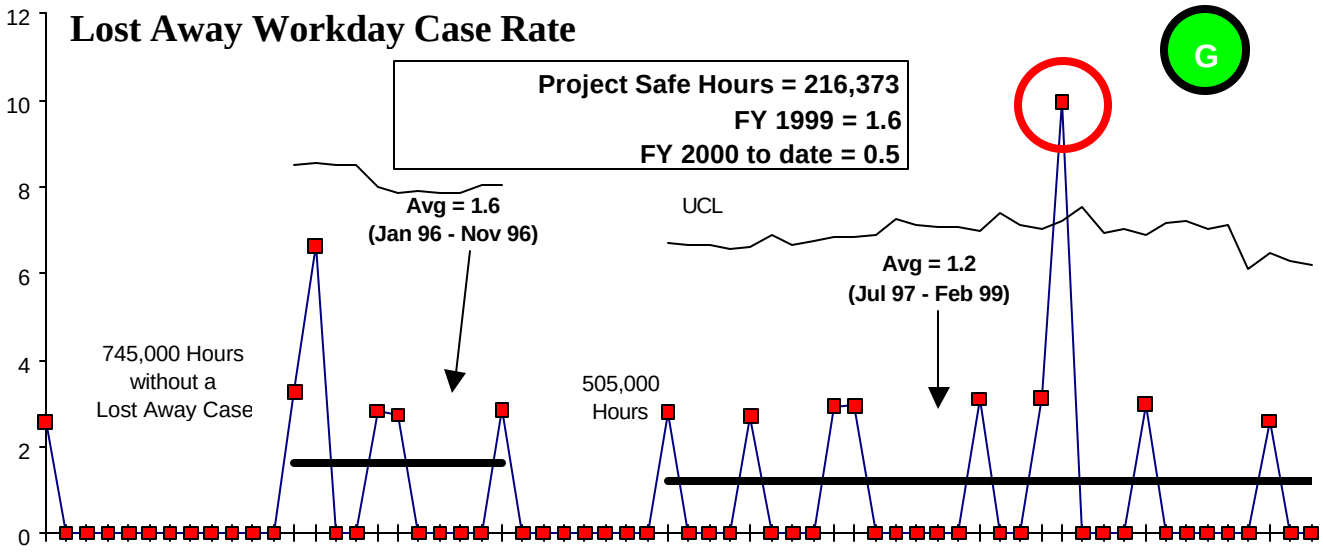
- Declared readiness and initiated phased startup of three additional muffle furnaces.
- Continued progress to support startup of Pu Solution Stabilization:
  - Accelerated delivery of remaining process glove boxes and equipment.
  - Completed facility tie-in design.
  - Issued Operational Readiness Review Plan of Action (POA) for internal review.
- Approved National Environmental Policy Act of 1969 (NEPA) Environmental Impact Statement (EIS) Supplement Analysis in support of Project W-460, Plutonium Stabilization and Packaging System.
- DOE-RL approved a request to devalue Buildings 216-Z-9-A&B enabling fire detection systems to be deactivated.
- Completed sprinkler replacement project.
- Identified potential Pu metal safety vulnerability and initiated rapid corrective actions.
- Plutonium Oxide Stabilization – A total of 201 cans of oxides/sludges have been stabilized (28 items since last report).

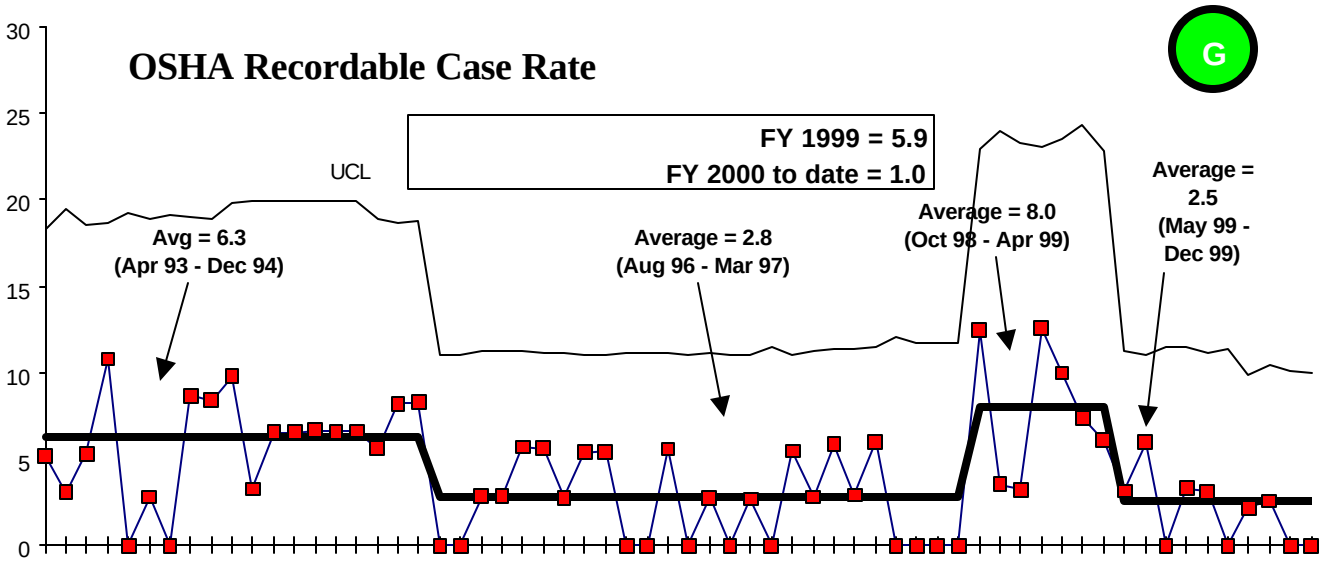
SAFETY

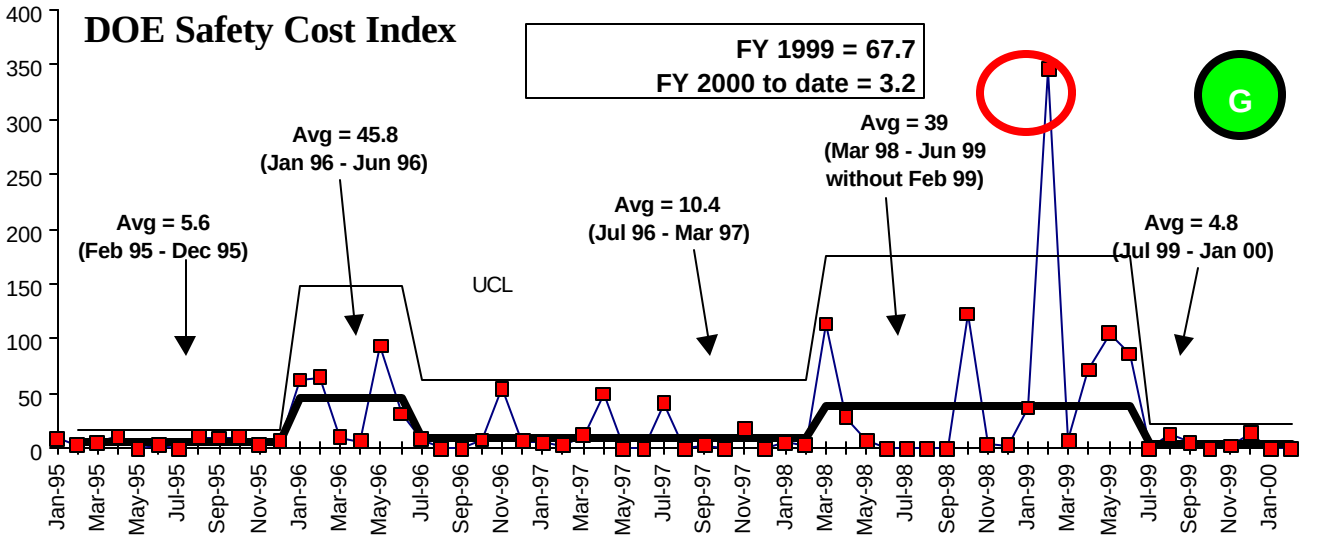
Safety performance has continued excellent in February with no OSHA Recordable or Lost Workday Case injuries.

Case reclassifications and additional days on open cases have caused readjustments of past data. There continues to be a growth in lost/restricted days for February 2000.

The past eight months were below average on the Cost Index. OSHA recordable case rate has significantly improved in comparison to the adverse trend of Spring 1999. An initial baseline rate of 2.5 has been calculated, which is equal to the PHMC overall rate.


Lost Away Workday Case Rate
G
Project Safe Hours = 216,373
FY 1999 = 1.6
FY 2000 to date = 0.5
Avg = 1.6
(Jan 96 - Nov 96)
UCL
Avg = 1.2
(Jul 97 - Feb 99)
745,000 Hours
without a
Lost Away Case
505,000
Hours
12
10
8
6
4
2
0

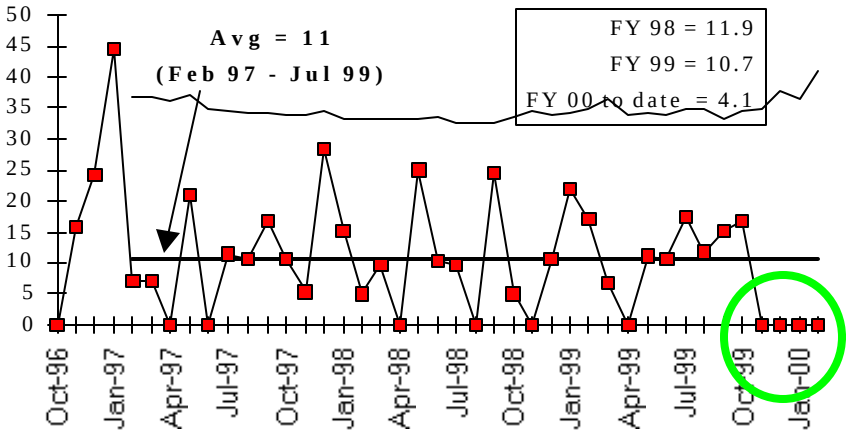

OSHA Recordable Case Rate
G
FY 1999 = 5.9
FY 2000 to date = 1.0
UCL
Avg = 6.3
(Apr 93 - Dec 94)
Average = 2.8
(Aug 96 - Mar 97)
Average = 8.0
(Oct 98 - Apr 99)
Average =
2.5
(May 99 -
Dec 99)
30
25
20
15
10
5
0

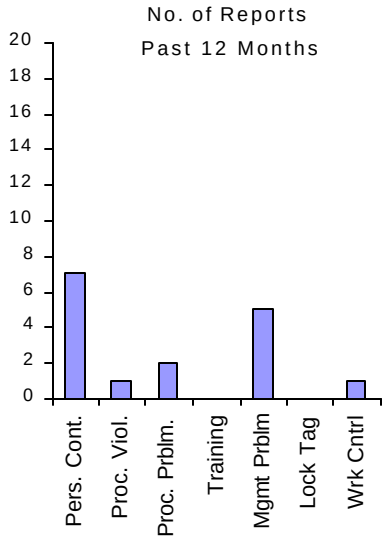

DOE Safety Cost Index
G
FY 1999 = 67.7
FY 2000 to date = 3.2
Avg = 5.6
(Feb 95 - Dec 95)
Avg = 45.8
(Jan 96 - Jun 96)
UCL
Avg = 10.4
(Jul 96 - Mar 97)
Avg = 39
(Mar 98 - Jun 99
without Feb 99)
Avg = 4.8
(Jul 99 - Jan 00)
400
350
300
250
200
150
100
50
0
Jan-95
Mar-95
May-95
Jul-95
Sep-95
Nov-95
Jan-96
Mar-96
May-96
Jul-96
Sep-96
Nov-96
Jan-97
Mar-97
May-97
Jul-97
Sep-97
Nov-97
Jan-98
Mar-98
May-98
Jul-98
Sep-98
Nov-98
Jan-99
Mar-99
May-99
Jul-99
Sep-99
Nov-99
Jan-00

CONDUCT OF OPERATIONS / ISMS STATUS

CONDUCT OF OPERATIONS

Events per 200,000 Hours





Green

ISMS STATUS

Green

- Phase I verification assessment of Integrated Safety Management System ISMS was completed:
  - Corrective Actions have been defined and scheduled.
  - Current draft schedule indicates corrective actions complete by April 15.
- Phase II Verification will be completed in conjunction with all Fluor projects during the 3rd quarter of the fiscal year.

BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

BREAKTHROUGHS

Green

- Implementation of a WIPP "validated" plutonium measuring nondestructive assay (NDA) system in FY 2000 is being worked. If successful, implementation of this WIPP "validated" Pu NDA measurement for residue materials prior to cementation will significantly reduce shipment costs to WIPP (i.e., results in significantly fewer drums by as much as 1000, which will reduce overall costs by approximately $2.4M (i.e., $2.4K per drum).

OPPORTUNITIES FOR IMPROVEMENT

Yellow

- Efforts to accelerate all phases of the clearance process continue with the assistance of DOE-RL. NMS is actively engaged in adding appropriate staff to catch back corresponding schedule delays.
  Status: Selected staffs have been allowed to report for training classes prior to receiving clearances. [This item will no longer be reported.]

- There is a need to identify and consolidate various cost saving initiatives resulting from increased operating efficiencies. Conduct a summit meeting of all parties to maximize efforts and direct savings to accelerate stabilization activities.
  Status: Opportunities for savings are continuing to be investigated. [This item will no longer be reported.]

- Initiated accelerated furnace cool-down work plan and early tests indicate a significant savings in time required for cool-down. Opening the furnace doors at 400 degrees increased the glovebox temperature only two degrees temporarily and saved over three hours in the cooling time. Expect to be able to continue to at least 600 degrees without negative effects.

- Modification of Personnel Security Assurance Program (PSAP) two-man rule requirements, which would provide a potential reduction of resources for facility surveillance and maintenance activities.

- Modified PFP airborne radioactivity area (ARA) posting practice allowing limited area ARA posting to support duct level decontamination without posting the entire processing area as ARA. This not only provides a current cost savings by reducing resources needed for duct level decontamination work, it is also being reviewed for implementation in other areas.

UPCOMING ACTIVITIES

- Begin Pu solution stabilization via $Mg(OH)_2$ in the 4th quarter of FY 2000:
  Deliver glove boxes and equipment for installation by April 11, 2000.
  Complete ORR and training activities.
- Startup Cementation operations in the 4th quarter of FY 2000 (i.e., July 2000).
- Commence full unrestricted operation of five new muffle furnaces in March 2000.
- Complete Pipe-and-Go evaluation and long lead regulatory permits.
- Complete Project W-460 Facility Design by April 2000.
- Complete installation and startup of the BTS by October 2000.
- Begin metal stabilization processing in November 2000.

COST PERFORMANCE (+$2.9M):

	BCWP	ACWP	VARIANCE
Nuclear Material Stabilization	$43.5	$40.5	$3.0

The $3.0 million (7 percent) favorable cost variance is due to a shortage of staff, a lag in costs for contracts [e.g., including the Energy Services contract for steam, $Mg(OH)_2$ glove box procurements, etc], and accelerated completion of baseline activities for oxide stabilization.

SCHEDULE PERFORMANCE (-$8.8M):

	BCWP	BCWS	VARIANCE
Facility Stabilization	$43.5	$52.3	-$8.8

The $8.8 million (17 percent) unfavorable schedule variance is due primarily to the behind status on Project W-460 vault modification construction awaiting final determination from EIS Supplement Analysis and equipment procurements, such as glove boxes, NDA lab equipment and outer can welder activities. Also, Project W-460 trailer installation activities have not started as scheduled but instead will be removed as part of the DOE-HQ directed 5% funding reduction in FY 2000. Also contributing to the unfavorable schedule variance is a hold on shipment of sand, slag and crucible to SRS due to the unavailability of shipping containers. There is delay in the installation of the $Mg(OH)_2$ system. Residue and polycube stabilization planned activities have changed and progress can't be claimed until approval of pending BCRs (approved in March 2000; will be implemented in March 2000).

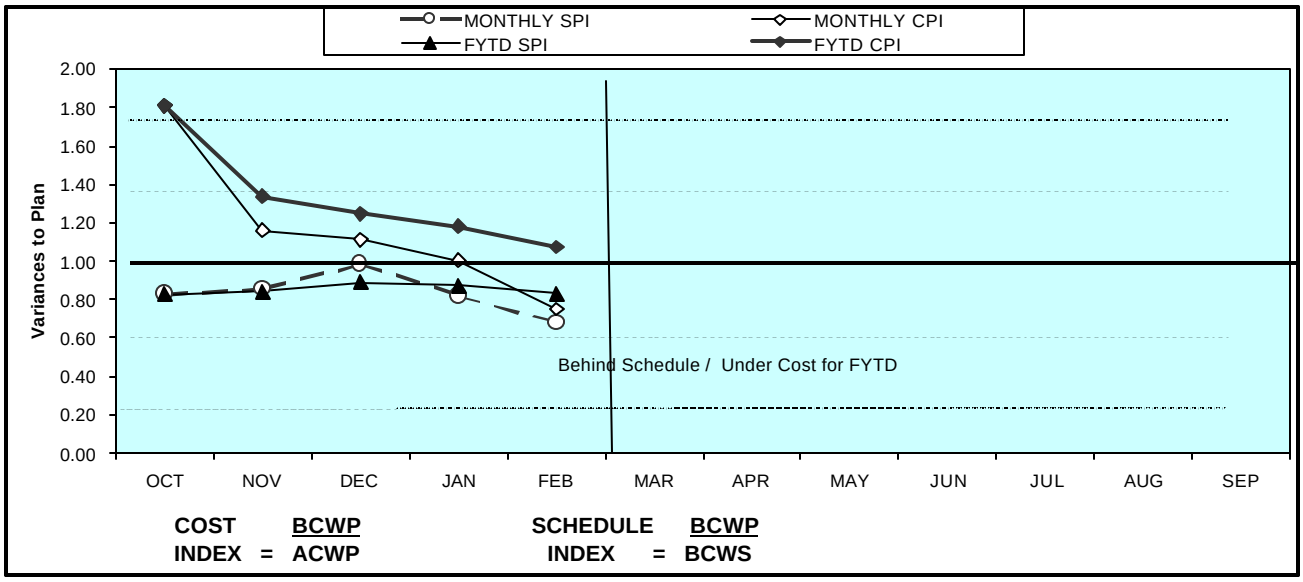
FY 2000 COST/SCHEDULE PERFORMANCE – ALL FUND TYPES
CUMULATIVE TO DATE STATUS – ($000)

		FYTD							
	By PBS	BCWS	BCWP	ACWP	SV	%	CV	%	PEM
WBS									
1.4.5	PFP								
TP05	Deactivation	$ 52,307	$ 43,470	$ 40,516	$ (8,837)	-17%	$ 2,954	7%	$ 126,218
	Total	$ 52,307	$ 43,470	$ 40,516	$ (8,837)	-17%	$ 2,954	7%	$ 126,218

RL-Directed costs (steam) are included in the PTS BCWS.

Yellow

COST/SCHEDULE PERFORMANCE INDICES (FEBRUARY 2000 AND FYTD)



FY 2000	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MONTHLY SPI	0.83	0.85	0.98	0.82	0.68							
MONTHLY CPI	1.81	1.16	1.11	1.01	0.75							
FYTD SPI	0.83	0.84	0.89	0.87	0.83							
FYTD CPI	1.81	1.34	1.25	1.18	1.07							
MONTHLY BCWS	$7,913	$12,725	$9,999	$10,540	$11,130							
MONTHLY BCWP	$6,543	$10,873	$9,849	$8,638	$7,567							
MONTHLY ACWP	$3,613	$9,386	$8,845	$8,587	$10,085							
FYTD BCWS	$7,913	$20,638	$30,637	$41,177	$52,307							
FYTD BCWP	$6,543	$17,416	$27,265	$35,903	$43,470							
FYTD ACWP	$3,613	$12,999	$21,844	$30,431	$40,516							

COST VARIANCE ANALYSIS: (+$2.9M)

WBS/PBS **Title**

1.4.5.1.10/TP05 **Maintain Safe and Secure SNM (+$0.9M)**

Description and Cause: Underrun due to lag in subcontractor invoices and accruals.
Impact: No impact.
Corrective Action: None required.

1.4.5.1.13/TP05 **Stabilization of Nuclear Materials at PFP (+$2.4M)**

Description and Cause: The favorable cost variance is due to accelerated completion of the baseline activities for oxide stabilization with fewer resources and lag in subcontractor and material invoices and accruals. The favorable cost variance for oxide stabilization should continue as additional oxide stabilization occurs within the original baseline budget for FY 2000. This favorable variance is partially offset by unfavorable variances in residue and polycube stabilization. The residue and polycube stabilization budget does not reflect changes in the work being performed under advance work authorization.

Impact: None
Corrective Action: Approve and implement baseline change requests to reflect revised path forward for residue and polycube stabilization activities (BCRs now approved in March 2000).

1.4.5.1.14/TP05 **Disposition of Nuclear Materials (+$1.8M)**

Description and Cause: Positive cost variance is the result hiring delays and lag in subcontractor and material invoices and accruals.
Impact: Potential delay in BTS startup.
Corrective Action: Maintain aggressive hiring, training, and clearance program for Nuclear Operators and other support.

1.4.5.1.15/TP05 **Transition PFP (-$0.5M)**

Description and Cause: The unfavorable cost variance is the result of increased costs for lab analysis of tank samples as well as carryover work scope not yet reflected in the baseline.
Impact: If work scope is stopped due to budget issues, the Tri-Party Agreement milestone due May 31, 2000 would not be met. Continuing work scope will result in cost over run for this activity, savings from elsewhere within NMSP will be required to offset the overrun.
Corrective Action: Approve and implement baseline change request to reflect FY 1999 carryover work scope. If PCBs are found to exceed allowable limits, a separate change request may be required to incorporate the additional special waste handling requirements into the baseline. Identify cost savings from elsewhere within the NMSP to offset this over run.

1.4.5.1.12/TP05 **PFP Fee Allocation (-$1.8M)**

Description and Cause: Unfavorable cost variance due to point adjustment (-$1,769K) in October to adjust for delay in staff hiring ramp-up at the beginning of FY 2000. Also an increase in the fee accrual from a rate 90% to 100%.
Impact: No impact.
Corrective Action: None required.

SCHEDULE VARIANCE ANALYSIS: (-$8.8)

WBS/PBS **Title**

1.4.5.1.14/TP05 Disposition of Nuclear Material (-$6.4M)
Description and Cause: The unfavorable schedule variance is primarily due to delays in design and construction of Line Item Project W-460, Plutonium Stabilization and Packaging System. A portion of this schedule variance is the result of work scope that is being deleted due to the FY 2000 funding reduction, a baseline change request is in process. Also contributing to the unfavorable schedule variance is the hold on shipment of sand, slag and crucible to SRS. Due to the unavailability of shipping containers, SS&C will be processed at PFP rather than shipped to SRS; this change has been documented via change control.
Impact: Potential delay in BTS start up.
Corrective Action: Approve and implement baseline change requests currently in process.

1.4.5.1.13/TP05 Stabilize SNM (-$1.6M)
Description and Cause: The unfavorable schedule variance is due to changes in the planned activities for residue and polycube stabilization. The revised path forward for these two activities is being worked via an advance work authorization but performance will not be recognized until approval of the pending baseline change requests (approved in March 2000). Also contributing to this schedule variance is the delay for installation of the $Mg(OH)_2$ system.
Impact: The installation of the $Mg(OH)_2$ system will be completed late; expect to complete the FY 2000 Pu Solution stabilization baseline scope by year end.
Corrective Action: Approve and implement baseline change requests currently in process. Continue to pursue options to compress $Mg(OH)_2$ installation and startup schedule.

1.4.5.1.15/TP05 Transition PFP (-$0.1M)
Description and Cause: Delays in setup and start of extruding samples in 222-S Laboratory Sample Analysis. Also, initial plan was to use a hood for analysis, but a hot cell had to be used.
Impact: No Impact expected.
Corrective Action: Expect to recover schedule by the end of March.

ISSUES

DOE Standard 3013-99 requires that "oxides shall be stabilized by heating the material in an oxidizing atmosphere to a Material Temperature of at least 950°C … for not less than 2 hours."

Impact(s): If unable to qualify stabilization process without any modification, a significant process modification may be required.
Corrective Action: A test plan has been drafted to evaluate our process and potential options. We are working with Rocky Flats to come to a joint solution.

Lack of certified shipping containers in the DOE Complex to meet PFP schedules.

Impact(s): Prohibits shipment of nuclear materials that cannot go to either WIPP or DOT-6M containers (i.e., Pu standards for re-certification, shipment of reactive materials for processing elsewhere, etc,)
Corrective Action: Work with the DOE Complex to certify containers to meet PFP shipping needs (i.e., 9975 container to be re-certified in June 2000, etc.).

Jointly resolve issues associated with precipitation process. Concentration, Density, Filtrate Handling (permitting of 241-Z to handle heavy metals), discard directly to tank farms.

Impact(s): Significantly impacts the number of containers to be stored under final disposition (approximately 1000 additional containers).
Corrective Action: Establish a team to develop a path forward to resolve these issues.

Implementation of supercritical fluid extraction technology for moisture measurements will require installation of a new glovebox in room 235-B.

Impact(s): This installation will require several hundred thousand dollars more than budgeted for procurement and installation and result in several weeks of processing impact during the installation.
Corrective Action: Establish a cost and schedule estimate for the installation of this equipment and process a BCR to modify schedule.

Equipment for processing Pu inside the gloveboxes needs to be defined and approved by Operations before glovebox size can be finalized.

Impact(s): Gloveboxes cannot be ordered until size is finalized.
Corrective Action: Use mockup and daily meetings with Operations to finalize the internal arrangement of the gloveboxes to the point where a size can be determined and the gloveboxes ordered.

Seismic concerns with room 638 cage, 2736-ZB facility.

Impact(s): Completing recovery plan to address these issues, resulting in higher exposure than normal to vault operators.
Corrective Action: Install new seismically qualified racks in room 638 cage.

BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS ($000)

PROJECT CHANGE NUMBER	DATE ORIGINAL	BCR TITLE	FY00 COST IMPACT	SCH	TECH	DATE TO FHI CCB	CCB APR'VD	RL APR'VD
FSP-2000-001	13-Oct-99	Delete TRP-99-419, Complete Install. of Production Scale Vertical Calciner	$0					
FSP-2000-004	23-Nov-99	PFP Test Polycube Stabilization via Muffle Furnace	$0	X	X	17-Feb-00	17-Feb-00	
FSP-2000-005	30-Nov-99	Implement PFP Int Proj Mgmt Plan Addendum I	$659	X	X			
FSP-2000-011	27-Dec-99	Adjusted PFP Cementation Processing to include Sand, Slag and Crucible	$0	X	X	14-Jan-00	18-Jan-00	17-Feb-00
FSP-2000-025	10-Mar-00	PFP Replacement Transformer	$992	X		27-Mar-00	27-Mar-00	Not Req'd
FSP-2000-029	26-Jan-00	PFP FY2000 Funds Reduction	($6,885)	X		9-Mar-00	23-Mar-00	
ADVANCED WORK AUTHORIZATION								
AWA-00-001	21-Oct-99	Polycube Stabilization Testing	$500	X	X			21-Oct-99
AWA-00-002	22-Sep-99	Residue Cementation	$500	X	X			19-Oct-99
AWA-00-003	01-Jan-00	Main Power Transformers	$350	X				31-Jan-00
AWA-00-004	01-Jan-00	2nd Bagless Transfer Unit	$500	X	X			11-Feb-00
AWA-00-005	06-Mar-00	2nd Bagless Transfer Unit	$500	X	X			8-Mar-00

MILESTONE ACHIEVEMENT

MILESTONE TYPE	FISCAL YEAR-TO-DATE				REMAINING SCHEDULED			TOTAL FY 2000
	Completed Early	Completed On Schedule	Completed Late	Overdue	Forecast Early	Forecast On Schedule	Forecast Late	
Enforceable Agreement	1	0	0	0	0	1	0	2
DOE-HQ	0	0	0	1	0	0	0	1
RL	0	0	0	0	0	9	0	9
Total Project	1	0	0	1	0	10	0	12

Tri-Party Agreement / EA Milestones

Tri-Party Agreement Milestone M-15-37A (TRP-00-501), **"Deliver Two (2) Tank Z-361 Core Samples to 222-S"**, due 10/30/99
Completed 1 month early (9/28/99)

Green

DNFSB Commitments

MILESTONE EXCEPTION REPORT

Number/WBS	Level	Milestone Title	Baseline Date	Forecast Date

OVERDUE – 1

TRP-00-500 1.4.5	**HQ**	Install Two LANL Pyrolysis Units for Stabilization of Polycubes	12/31/99	Proposed Deletion

Cause: See DNFSB Commitment above.
Corrective Action: Thermal stabilization testing at Hanford's Pacific Northwest National Laboratory and the Plutonium Finishing Plant's Plutonium Process Support Laboratories is underway with an approved Advance Work Authorization. A baseline change request has been prepared documenting this change in polycube stabilization methodology and is in the DOE-RL approval process (i.e., this BCR was approved in March 2000).

FY 1999 OVERDUE – 2

TRP-99-419 1.4.5	**RL**	Complete Installation of Production Scale Vertical Calciner	09/30/99	Proposed Deletion

Cause: The production scale vertical calciner has been replaced with the Magnesium Hydroxide Precipitation process.
Impact: No impact. This milestone is obsolete.
Corrective Action: Since installation and testing of the production scale vertical calciner is an EM-65 Management Commitment, the Department of Energy, Richland Office (DOE-RL) change control process cannot remove this milestone.

TRP-99-500 1.4.5	**HQ**	Complete Installation & Testing of Production Vertical Calciner	09/30/99	Proposed Deletion

Cause: The production scale vertical calciner has been replaced with the Magnesium Hydroxide Precipitation process.
Impact: No impact. This milestone is obsolete.
Corrective Action: Since this milestone is a DOE-HQ milestone and is part of the DOE-HQ 1998 DNFSB Recommendation 94-1 Implementation Plan, the Department of Energy, Richland Office change control process cannot remove this milestone. However, this milestone will be removed upon approval of the revised DOE-HQ DNFSB Recommendation 94-1 Implementation Plan.

PERFORMANCE OBJECTIVES

Oxides/Metals/Polycubes Stabilization

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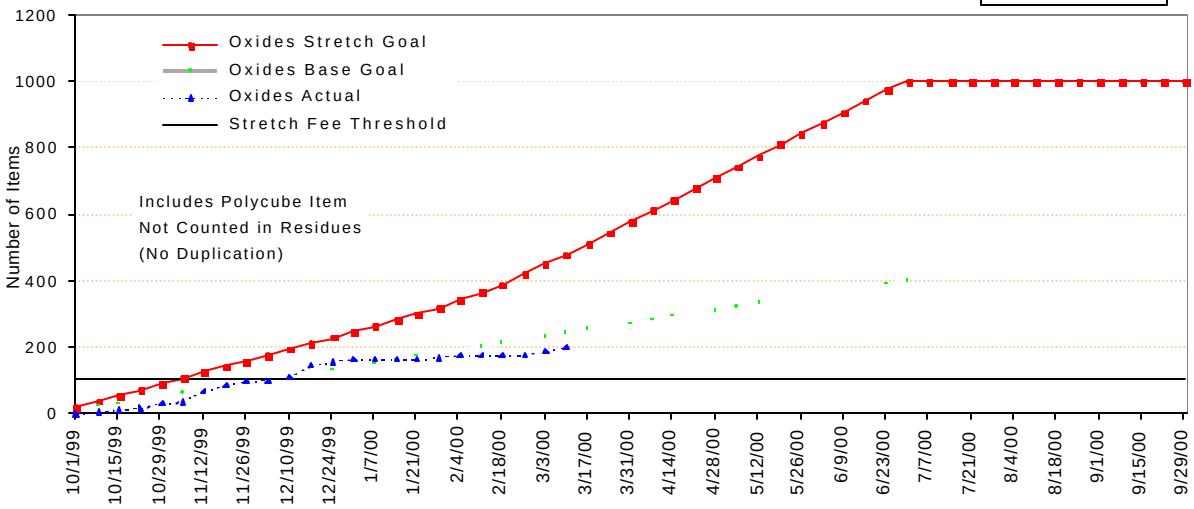
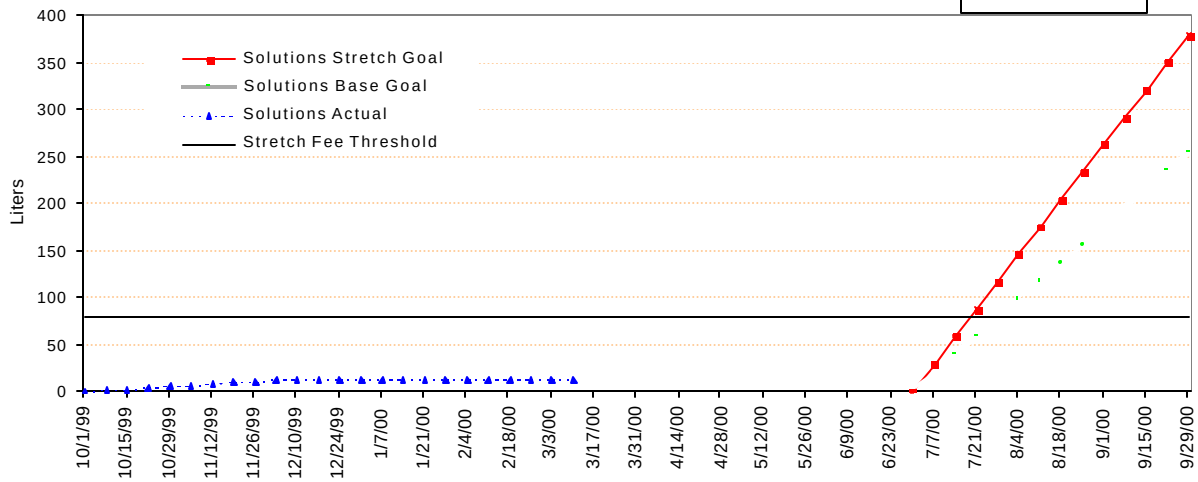


	10/1	10/15	10/29	11/12	11/26	12/17	12/31	1/14	1/28	2/11	2/25	3/10	3/24	4/14	4/28	5/12	5/26	6/9	6/23	7/7	7/21	8/11	8/25	9/8	9/22
Oxides Stretch Goal	18	53	88	123	159	212	247	282	318	366	420	478	545	644	710	776	842	908	975	1000	1000	1000	1000	1000	1000
Oxides Base Goal	10.1	30.2	50.4	70.6	90.7	121.0	141.1	161.3	181.4	201.6	221.8	241.9	262.1	292.3	312.5	332.6	352.8	373.0	393.1						
Oxides Actual	0	10	27	67	95	148	164	164	169	174	175	201													
Stretch Fee Threshold	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

SOLUTION STABILIZATION

Yellow

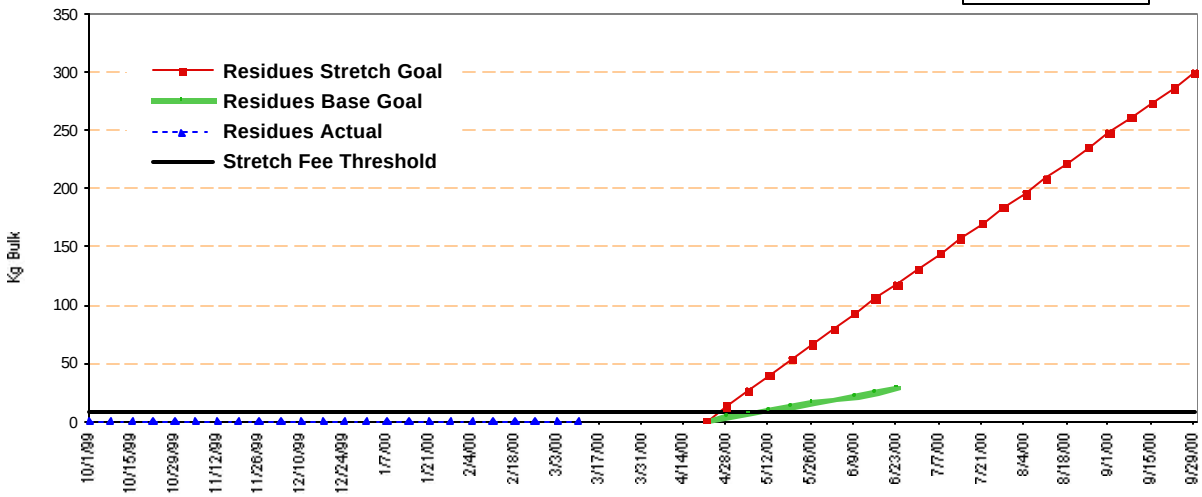


	10/1	10/15	10/29	11/19	12/3	12/17	12/31	1/14	2/4	2/18	3/3	3/17	4/7	4/21	5/5	5/19	6/2	6/23	7/7	7/21	8/4	8/18	9/8	9/22
Solutions Stretch Goal																			29.2	87.6	146	204.4	292	350.4
Solutions Base Goal																			19.6	58.8	98.0	137.2	196.0	235.2
Solutions Actual	0	2	5	9	12	13	13	13	13	13	13													
Stretch Fee Threshold	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80

Aggressively pursuing construction completion in support of stabilization activities.

RESIDUES STABILIZATION

Yellow



	10/1	10/15	10/29	11/19	12/3	12/17	12/31	1/14	2/4	2/18	3/3	3/17	4/7	4/21	5/5	5/19	6/2	6/23	7/7	7/21	8/4	8/18	9/8	9/22
Residues Stretch Goal														0	27.2	53.2	79.2	118.2	144.2	170.2	196.2	222.2	261.2	287.2
Residues Base Goal														0	7	13	19	29						
Residues Actual	0	0	0	0	0	0	0	0	0	0	0													
Stretch Fee Threshold	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

Currently working Central Waste Complex / WIPP Acceptance and RCRA permitting issues.

KEY INTEGRATION ACTIVITIES

- Continue working with PNNL on activities associated with the $Mg(OH)_2$ process and polycube stabilization issues
- Continue discussions with Waste Management regarding Waste Isolation Pilot Program certification